



ISOTAB* TRIACS ELECTRICALLY ISOLATED

TO-220

8 AMPERE
10 AMPERE
15 AMPERE

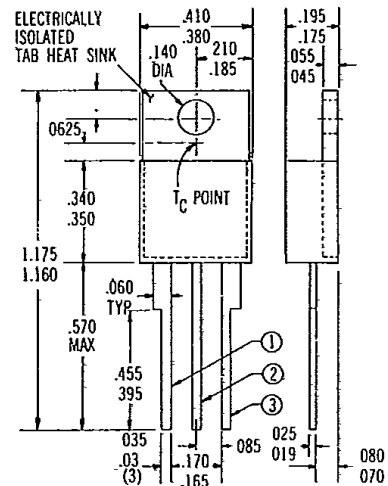


Hutson ISOTAB*-packaged triacs featuring an improved electrical isolation technique, will withstand a minimum of 1600 VAC from leads to tab for one minute at 80°C case temperature. Hermetically sealed within this package is a dense, void-free-glass passivated, hermetically-sealed chip. ISOTAB triacs have a low thermal impedance and are available in wide range of current and voltage ratings, from 8 to 15 Amperes and 50 to 600 Volts. The 15 Amp versions feature Beryllium Oxide isolation for further improved thermal characteristics.

These economical, highly reliable triacs are the result of Hutson's advanced engineering and manufacturing technology, and experience in switching-device applications.

These Hutson triacs are bi-directional triode thyristors and may be switched from off-state to conduction for either polarity of applied voltage with positive or negative gate triggering. They are designed for control of AC loads in applications such as lighting, heating, and motor speed controls, and static switching relays.

In addition to these plastic packaged triacs, Hutson offers other package configurations in current ratings to 60 Amperes and Voltage (V_{DRM}) ratings to 1000V. All Hutson triacs are available in chip form. For additional information, please consult Hutson Industries.



TO-220
ELECTRICALLY ISOLATED
ISOTAB

REGISTERED TRADEMARK OF HUTSON INDUSTRIES

ALL DIMENSIONS IN INCHES

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	SYMBOL	V _{DROM}	DEVICE NOS. (NOTE 1)			UNITS		
			08	010	015			
MAXIMUM RATINGS	Repetitive Peak Off-State Voltage, Gate Open, and T _J = 100°C	V _{DROM}	50 100 200 300 400 500 600	08 18 210 310 410 510 610	010 110 215 315 415 515 615	VOLT		
	RMS On-State Current at T _C = 75°C and Conduction Angle of 180°	I _{TRMS}		8	10	15	AMP	
	Peak Surge (Non-Repetitive) On-State Current, One-Cycle, at 50Hz or 60Hz	I _{TSM}		100	100	150	AMP	
	Peak Gate-Trigger Current for 3μsec, Max.	I _{ETM}		3	4	4	AMP	
	Peak Gate-Power Dissipation at I _{ET} ≤ I _{ETM} for 3μsec, Max.	P _{GM}		20	40	40	WATT	
	Average Gate-Power Dissipation	P _{G(AV)}		0.2	0.5	0.8	WATT	
	Storage Temperature Range	T _{stg}		← -40 to +150 →			°C	
	Operating Temperature Range, T _C	T _{oper.}		← -40 to +100 →			°C	
	ELECTRICAL CHARACTERISTICS At Maximum Ratings and at Specific J Case Temperatures	Peak Off-State Current, Gate Open, T _J = 100°C V _{DROM} = Max. Rating	I _{DROM}		2.0 MAX	2.0 MAX	2.0 MAX	mA
		Maximum On-State Voltage at T _C = 25°C (Peak)	V _F		2.2 MAX	2.2 MAX	2.2 MAX	VOLTS
Peak On-State Current				11	14	21	AMP	
DC Holding Current, Gate Open and T _C = 25°C		I _{HO}		50 MAX	50 MAX	50 MAX	mA	
Critical Rate-of-Rise of Off-State Voltage for V _D = V _{DROM} , Gate Open, T _C = 100°C		Critical dv/dt		5 TYP	5 TYP	5 TYP	V/μsec	
DC Gate-Trigger Current for V _D = 12VDC, R _L = 30Ω and at T _C = 25°C (T ₂ +Gate+, T ₂ -Gate-) Quads I and III (T ₂ +Gate-, T ₂ -Gate+) Quads II and IV (Note 2)		I _{ET}		50 MAX 80 MAX	50 MAX 80 MAX	50 MAX 80 MAX	mA mA	
			DC Gate-Trigger Voltage for V _D = 12VDC, R _L = 30Ω and at T _C = 25°C	V _{ET}		2.5 MAX	2.5 MAX	2.5 MAX
Gate-Controlled Turn-on Time for V _D = V _{DROM} , I _{ET} = 80mA, t _r = 0.1μsec., I _T = 10A (Peak) and T _C = 25°C		t _{gt}		2.5 TYP	2.5 TYP	2.5 TYP	μsec	
Thermal Resistance, Junction-to-Case		R _{θJC}		2.5 TYP	2.5 TYP	*1.5 TYP	°C/W	

ALL VALUES APPLY IN EITHER DIRECTION

*BeO Substrate

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NOTE 1: I = ELECTRICALLY ISOLATED

T = TRIAC

0 to 6 = 50 to 600 V (V_{DRM}) RATING
 8, 10, 15 = 8A, 10A & 15A $I_{T(RMS)}$

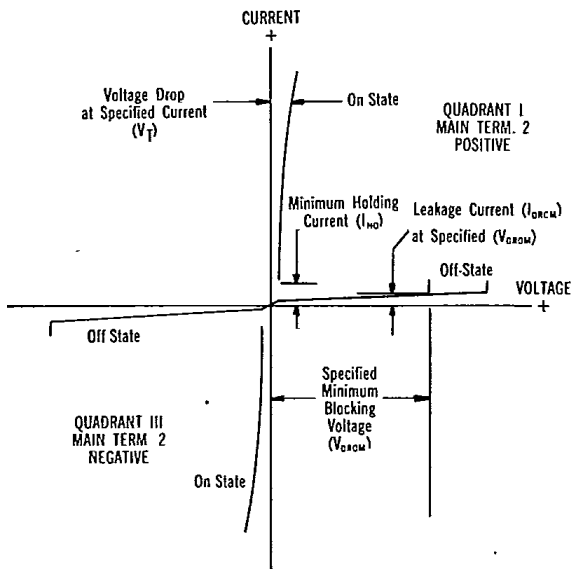
EXAMPLE
 I T 4 8 A

Example Device No. would be: an Electrically isolated Triac, 400 V (V_{DRM}), 8A $I_{T(RMS)}$ with 50 mA (I_{GT}) Quads I & III

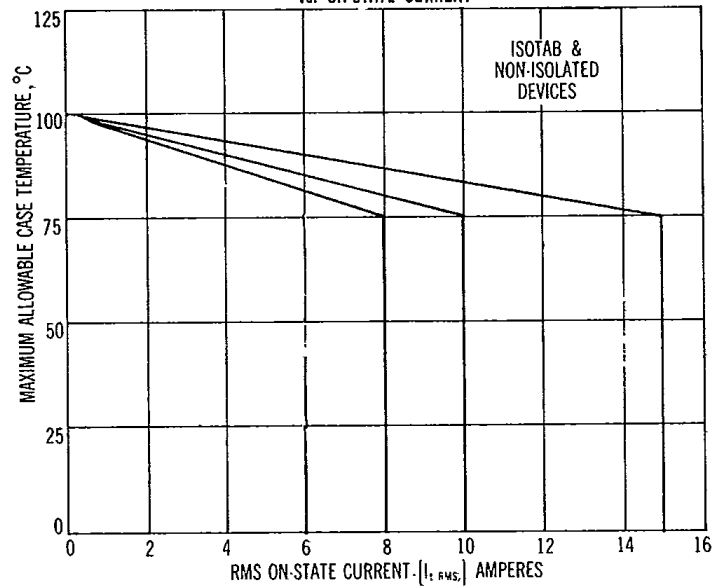
NOTE 2: I_{GT} CHARACTERISTICS:

- NO SUFFIX = 50 mA, I & III QUADS;
 80 mA, II & IV QUADS;
- A = 50 mA I & III QUADS ONLY
- B = 100 mA I & III QUADS ONLY
- HA = 25 mA I & III QUADS ONLY
- HX = 25 mA I & III QUADS 40 mA, QUADS II & IV

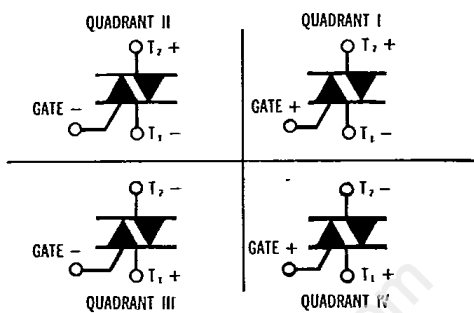
TYPICAL VOLTAGE-CURRENT CHARACTERISTICS



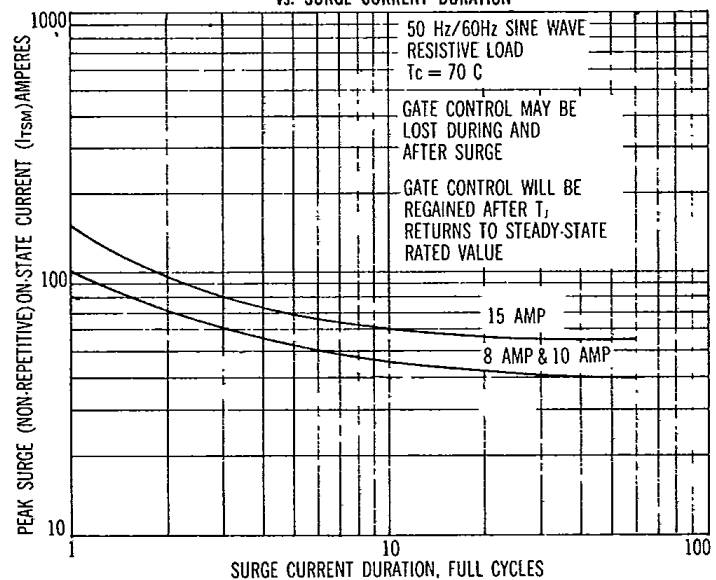
MAXIMUM ALLOWABLE CASE TEMPERATURE vs. ON-STATE CURRENT



DEFINITION OF QUADRANTS

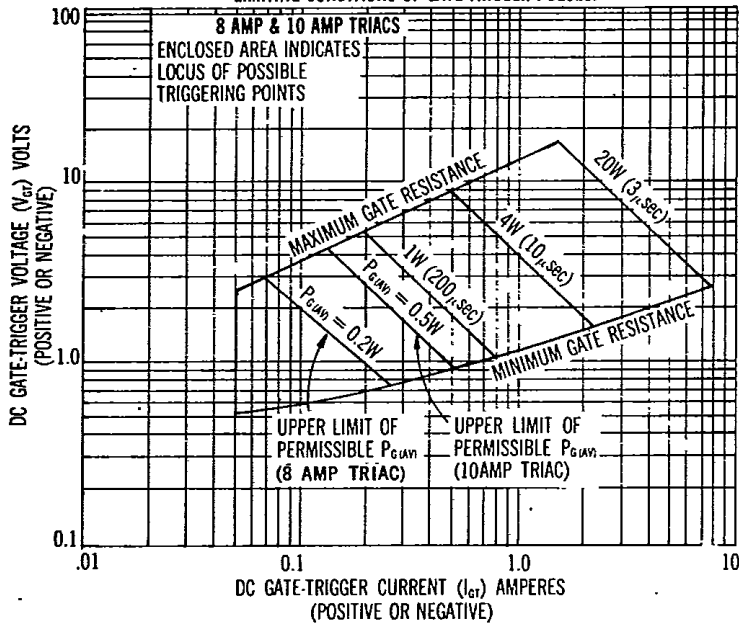


PEAK SURGE ON-STATE CURRENT vs. SURGE CURRENT DURATION

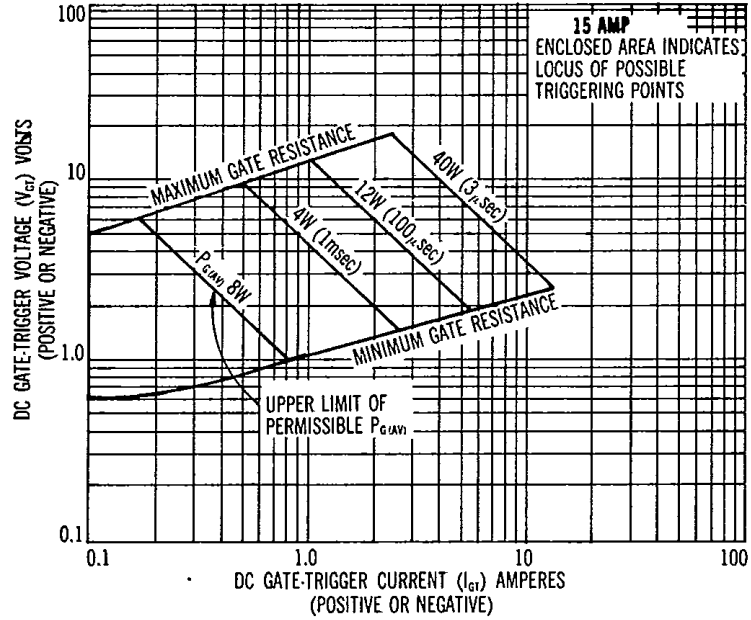


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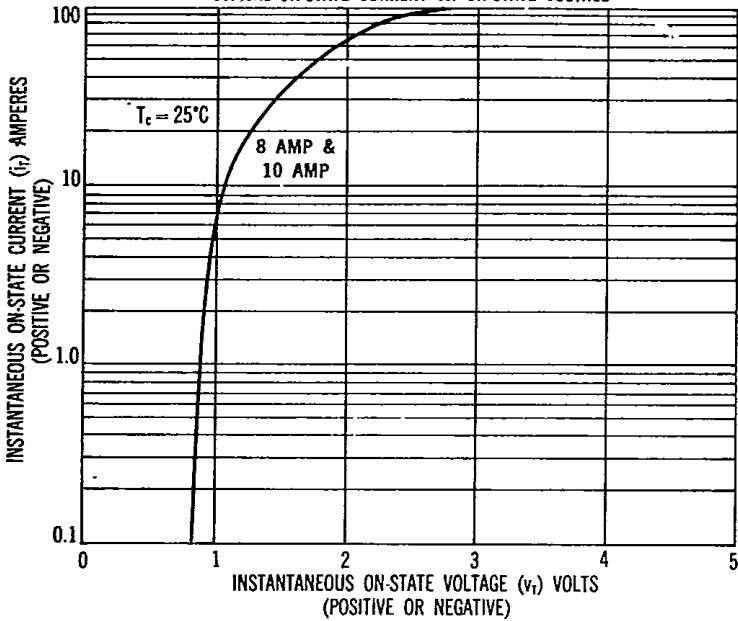
GATE-TRIGGER CHARACTERISTICS AND LIMITING CONDITIONS OF GATE-TRIGGER PULSES.



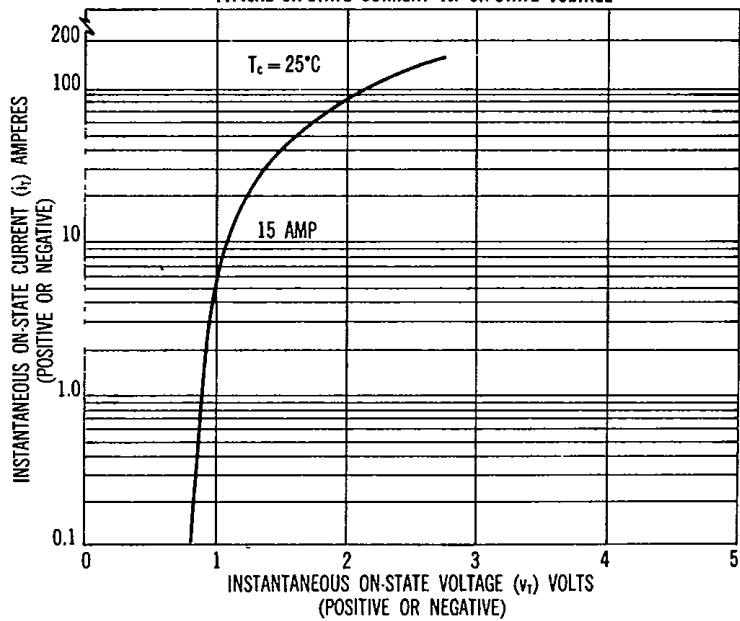
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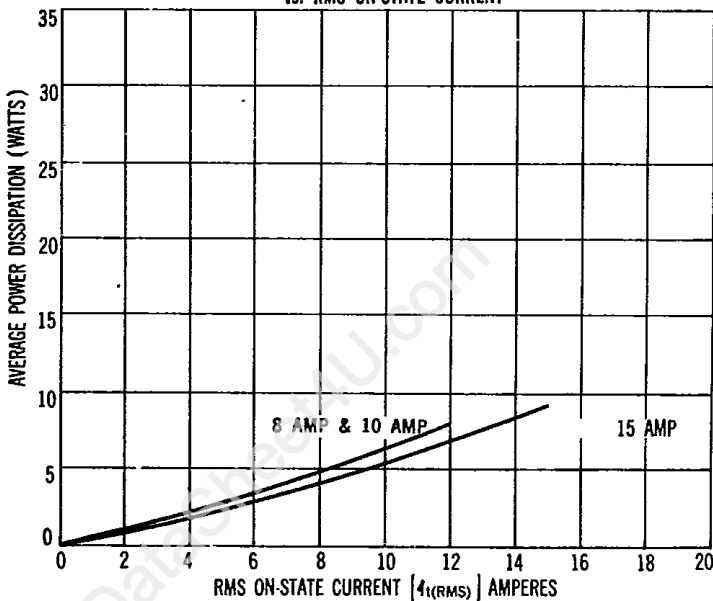
TYPICAL ON-STATE CURRENT vs. ON-STATE VOLTAGE



TYPICAL ON-STATE CURRENT vs. ON-STATE VOLTAGE



TYPICAL AVERAGE POWER DISSIPATION vs. RMS ON-STATE CURRENT



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